

Getting It Right

keynote perspective





Introduction

The great American philosopher Yogi Berra once said, "If you don't know where you're going, you'll probably end up somewhere else."

After overseeing the purchase of more than 20,000 computer systems, installing more than 100 networks, and spending millions of dollars on software, network and gadgets, I think it's good to know that there is a statute of limitations on stupidity. Frankly, I've made just about every mistake you could imagine (and a few that you couldn't imagine). What I've learned is that if you take time to align your initiatives with your intended learning goals, every minute spent planning and questioning will save an hour at implementation stage, not to mention huge sums of money.

This perspective is designed to help teachers, educational leaders, and decision makers wade through the complexities of technology planning. It will provide an overview of how you can address state or provincial standards, improved test scores, meeting your curricular requirements, fostering relevant staff development, and providing measurable accountability for expenditures, while at the same time ensuring that learners are effectively prepared with the skills and knowledge they will need to cope with the new realities of the 21st century.



Facing the Great Challenge

As educators we are facing, in this new digital age, perhaps the greatest challenge of our careers, both now and as the future approaches—the challenge of change. It's only fitting to begin briefly talking about things we don't really need to talk about.

You certainly understand the dilemma we're in. Why is it that while the world has changed, and continues to change so dramatically, education continues to struggle with many of those same issues of change? By now, it's apparent that this resistance comes from TTWWADI (That's The Way We've Always Done It). It is an absolutely unconscious, everyday, unexamined aspect of our daily lives.

We find TTWWADI in our various cultures, communities, core beliefs, homes, and manners. You can see it in the way we work, the way we play, the way we communicate; in our unexamined practices and assumptions about life; and, most especially, in education.

Where It's All Leading

There's an important matter we need to stop and consider here, which is whether or not our schools are preparing our students for this world. Maybe we're just doing a terrific job of preparing kids for the world and the economies of bygone eras.

Let's use a sports analogy here—specifically, football. When a quarterback drops back to pass and looks downfield for the receiver and throws the ball, where does he throw it? Does he throw it to where receiver is at that particular moment? No, he can't—he has to throw the ball to where the receivers are *going to be*.

So when the quarterback scans the defense and gets ready to take the snap, he's visualizing and anticipating where the receivers are going to be about 3.2 seconds into the future.



He then works his way back from the future to the present, to figure out what he has to do now to get to that future. Urban cultural anthropologist Jennifer James calls this technique “thinking in future tense”, which means understanding that the present is nothing more than the past of the future. Quarterbacks are futurists, and they get paid millions of dollars for it.

Educators are also paid to be futurists. We’re paid to use our intuition to make some reasoned extrapolations of what students will need to operate in the world of tomorrow, based on current trends. This is hard to do mainly because of TTWWADI, and because we are driven by the tyranny of the urgent. We’re controlled by the demands of the standards, of getting kids ready for the next class, the next day, the next topic, the next test, the next term—for the mandates of No Child Left Untested. Let’s be honest; school is not just about getting them ready for all those things.

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School is also about getting students ready for the life that they’ll have to live once they leave school. For this to happen, we need to have one eye focused on the here and now, and the other one has to be focused on what these students will need to survive, and hopefully thrive, in the world that awaits them after they leave school.

Educators Grant Wiggins and Jay McTighe call this “starting with the end in mind.” Based on current trends, we must extrapolate the future needs of our students and then map our way back through that visualized future to the present, where we need to start from. If we live life like a quarterback and start with the end in mind, the fundamental question shifts from what technology, platform, or software we should install to what skills, knowledge, and habits of mind our students will need to function and succeed in the 21st century. We need to use this as the basis of reconsidering education and ask, “What will learning look like one generation of students from now?”



Looking Through the Windows

In the book *Windows on the Future* by Ted McCain and Ian Jukes, several predictions were made about the future of education. The book was published in 2001, so we can now make a decent comparison of the predictions made then and the way things are now. Here are the main predictions the authors mapped out:

1. Education will not be confined to a specific place.

We used to bring the student to the classroom. Today, thanks to new technologies, the classroom can be the museum, the zoo, the office or lab, a forest, or anywhere else learning needs to take place. The students can immerse themselves in the real environment where the real problems take place.

2. Education will not be confined to a specific time.

Traditionally, learning happened 170 to 190 days a year, five to six hours a day. Today, learning is more needs-driven, and because of technology and the digital generation's preference to be "just-in-time" learners, learning can happen 24/7/365. It also coincides with the multi-career lifetimes our students will be leading.

3. Education will not be limited to a single teacher.

Because of InfoWhelm, knowledge is available anytime and anywhere. Teachers are no longer the sole vehicles for educating our students. Also, learning is more the product of collaboration and group initiative. But for this to happen, all aspects of our communities must be involved in the education of our students through virtual interaction around the globe.



4. Education will not be limited to human teachers.

We have increasingly powerful new digital tools with artificial intelligence systems and smart agents that learn about our needs. We can truly customize our learning with these devices. It's important to note, however, that we are in the earliest stages of what is sure to be a profound information and technology revolution. All this technology is second nature to today's generation of digital learners, and that can make the older generations feel "in the dark."

5. Education will not be limited to paper-based information.

An encyclopedia takes 15 hours to make, kills 23 trees, and costs hundreds of dollars to print. Now, look at a DVD: it takes pennies to print, seconds to manufacture, and it provides the user with multiple pathways to information. And, of course, there's always the Internet. There is still a place for paper materials, but the fact is that we are living in a primarily digital world, and these are the preferred methods for finding, obtaining, and storing information.

6. Education will not be limited to content memorization.

There is still a need for recall, but memorization is not the same as understanding. In the age of InfoWhelm, we need more. We are seeing a shift away from being specialists to being generalists, but also toward possessing effective analytical processing and construction skills. Today, it's important to be able to perceive what information means, to extract its significance and usable data, and to apply it to a real-world problem or scenario.

7. Education will not be confined to linear learning.

Our older generation and the ones before us were all paper-trained. We learned left to right, top to bottom, and in a very structured and sequential manner. Kids today are light- and sound-trained. They grow up seeing screen images as something to be interacted with, and what they want is instantaneous access to knowledge. They have totally different cognitive processes, and they use different areas of their brains to learn and extrapolate information.



8. Education will not be limited to the intellectual elite.

At one time, learning was relegated solely to the paper-based academics. New smart tools have leveled the playing field. Ordinary people can now do extraordinary things and access all kinds of useful information. There is a whole new mindset about what it means to be the “newly disabled”—the new illiterates include those who are both informationally and technologically impaired. It refers to those who are either unable or unwilling to change.

9. Learning will not be limited to childhood.

In the past, we were expected to learn once in our youth, and that would supposedly prepare us for the rest of our lives. Today, the idea that education stops after formal schooling is both naive and unrealistic. For learning to be effective in the digital age, it must be continuous. Learning has become the new form of labor in the 21st century. It is for now, tomorrow, and forever.

So those were the best guesses for learning and the future face of education in the 21st century, as predicted in 2001. Which ones came true?

Why Do We Have to Change?

Schools are making excellent use of technology, particularly for administrative purposes, deploying networks and systems to become more efficient and productive. Where schools seem to lag is in the effective and consistent use of technology in the classroom to improve teaching, learning, and assessment. This research further seems to be telling us that these vast investments in technology have been largely ineffective. So what’s the problem?

The problem lies not with the capability of the tools but with the use of the tools. You don’t blame the pencil if the student can’t write. The research tells us that, if used appropriately as tools of discovery, new technologies can profoundly transform learning. But this hasn’t generally happened—it seems that technology use continues to be on the periphery of education and that there is little understanding about the role it can and should play in the classroom and in the total experience of learning.



Getting It Right Means “Aligning It Right”

Before you figure out where you’re going, and you buy the class new laptops, you need to first figure out where you are. Then you need to determine where you’re going, what it will look like when you get there, and how you will determine that you have accomplished what you want to do—particularly how you will measure it and identify the benchmarks along the way.

You start by assessing the *now*, the current situation, and you do this with a “systems audit.” Doing a systems audit is a complex process, but ultimately the information collected becomes the baseline data for a yearly comparative snapshot, to track your progress as you go along with the process of new integration.

The challenge we face is that the individuals who are truly making the decisions that affect the lives of children and their teachers haven’t been in a classroom in a meaningful way for more than 30 years. You certainly could put a state-of-the-art piece of technology on the desk of every single student, teacher, and administrator in every single state. But if that’s all you did, then the only thing that would change is that the power bill would go way up.

Before you figure out where you’re going, you need to first figure out where you are.

The most powerful technology in a classroom will remain a classroom teacher, but not just any classroom teacher. It has to be one with a love of learning; an appreciation of the ethical, the esoteric, the aesthetic; and an understanding of how different learners learn at different stages. Any teacher who can be replaced by a computer should be, because computers will not replace teachers—at least not the good ones. Real change doesn’t occur by placing systems of hardware and software in schools, creating an infrastructure, and hoping the whole mess will be absorbed magically overnight. It’s not about hardware—it’s about headware.



Start by Keeping the End in Mind

We have to think in future tense and identify the skills students are going to need above and beyond being able to do well on a bubble test. We need to figure out how we're going to measure this, and then work our way back from the future to the present, to determine what we have to do now in order to get there.

Use Alignment

The message we need to convey is simple: Before the big decision makers buy those classes new laptops or whatever else they think is the answer, they have to first figure out where they are, where they're going, what it will look like when they get there, and how they are going to determine that they have, in fact, accomplished what they set out to do. Then they have to start building back from that future and begin to align all of the stakeholders so that they are all pointing in the same direction. Otherwise, pretty much any destination will do.

Collect Baseline Data

Before you spend millions of dollars, you need to take a snapshot of the now. Keep in mind this is more than a technical checklist. It involves many crucial points vital to ascertaining your best strategies for moving forward technologically:

- Where are you?
- Who's using the technology?
- Who's not?
- What are they using it for and why?
- What are the challenges/obstacles?

The information collected here becomes the baseline data needed for a yearly comparative snapshot. You can find several resources to help you with this process on the Committed Sardine web site at www.committedsardine.com. They are there to help you, so please check them out.



Maintain a Focus on Teaching, Not Technology

The acquisition and installation of technology and installing networks isn't the goal here. Research consistently shows us that those who have the least success are the ones who have poured all their money and thinking into equipment and network design rather than learning.

The primary focus has to be about moving beyond a fixation on technology to bringing critical thinking and information fluency skills . . .

Return on investment (ROI) in the form of improved student learning only comes to those who move beyond technology to focus on learning. This is done by first asking how we can best improve the reading, writing, and thinking skills of our students by aligning our technology intentions to our intended learning outcomes. This is primarily a learning question, not a technology question. The value comes from aligning the most appropriate technology with our intended learning outcomes and focusing on applications that will enhance thinking, decision making, and problem-solving skills that are purposely blended into the daily routines of teachers and students.

Build a Broad-Based Understanding of Critical Issues

Critical issues are not about hardware, software, networks, cards, cables, RAM, ROM, etc. While these are important, they should not be the initial focus, because these are "how" issues. We must first address "why" we're doing this. Unless we first address the philosophical issues of why the initiative is happening, the motivation to change remains external, and there is no internal commitment to continue. The primary focus has to be about moving beyond a fixation on technology to bringing critical thinking and information fluency skills to daily practices in science, math, language, art, and music classes. If we really want to have an impact, we must commit to aligning our use of technologies with our focus on teaching and learning strategies. Otherwise, change remains a myth.



Long-Term Commitment to High Levels of Staff Development

Today, less than 6% of budgets is typically allocated to staff development. The average teacher only receives five hours of tech-based training, and most of it is at literacy level. Research suggests we need to spend 20% to 30% of the budget on this type of training, and over a much more extended period of time. Success will only happen with long-term commitment, and staff development must align with your intended learning goals.

The most powerful strategies to promote staff commitment and competence are a rich, informal menu of learning opportunities that match diverse styles, interests, and skill levels of educators. We must teach them in the same way we want them to teach. There are a wide range of strategies that can be employed here:

- personal growth plans
- workshops
- mentoring
- virtual learning
- students as instructors
- study teams
- curriculum coaches on-site
- action research teams

This will take time, mind you—realistically anywhere from three to five years at the elementary level, and five to seven years at the secondary level.

Focus on Doing a Few Things Well, Not a Lot of Things Poorly

This is a lot like wanting to avoid using technology as a buffet—you try a little of this, a little of that, and eventually you get indigestion. Instead, it's ideal to treat technology as an entree—more like your main course. When it's a few things arranged very well, consumed gradually, it becomes much easier to digest.

Proceed Slowly

By slowing down, we avoid “installation fever.” The technology bandwagon has compelled schools to wire before they’ve considered where they’re going, or are even certain of the benefits of technology integration into their infrastructure.

Whatever is worth doing is worth doing well, and you have to assess your return on your investment.



**STEADY
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Furthermore, and with no disrespect intended, some technology vendors have a very narrow, short-term perspective of learning. Their primary focus is on moving the product and on low-level use. They have a basic understanding of the educational issues, but they are primarily salespeople.

Start by asking good questions. Once that happens, the need to wire the classroom is replaced with a focus on aligning hardware and software acquisition with strategic program delivery. The critical idea here is to take baby steps—half as much equipment, located and supported strategically, will have far more impact than randomly distributed stuff. With the advent of affordable, portable wireless technologies, this approach will become even more attractive.

Use Assessment to Steer Programs

Whatever is worth doing is worth doing well, and you have to assess your return on your investment. So ask the question: Are you assessing hardware and program efforts, teacher training skills, or student learning results? Remember that technology is just the learning medium, but assessment must be built into the budget, at about 10%.

Assessment must be used for two different purposes. First, there’s the baseline data that’s used for the initial diagnostic, formative, and summative evaluations based on the gap analysis between where we are and where we want to be. This has to be measured in terms of the level of student and staff usage and competencies.



Second, the data is used to continuously realign your efforts to your intended learning outcomes so that you can clearly determine in advance what measurable long-term goals you want to accomplish.

This can't just be measured through generalities and intangibles. Your intentions must be clearly stated, and your objectives must be clearly measurable. Mere equipment acquisitions don't equal student or teacher benefits, and the results don't happen by osmosis.

Use Organized Abandonment

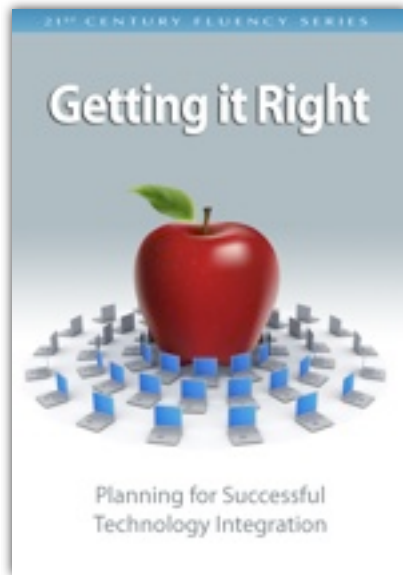
Organized abandonment means you have to be ready to shed initiatives that are ineffectual. Some districts deny that technology isn't being used or is being used ineffectually, and still others suffer through outbreaks of screen saver's disease. They're content to see computers being used for almost anything; it becomes about using technology for the sake of using technology.

But here is the truth of it: We simply won't see a ROI in the form of student performance unless we're willing to acknowledge what's working and what isn't. We must be willing to abandon strategies and activities that contribute little and waste valuable resources. We must align energies where they will do the most good and have the most impact on ROI.

Learn Lessons from The Past

We've been at this for more than 25 years, and during that time we've heard many grandiose claims and promises, some of which we've actually seen delivered. Nevertheless, we've got good reason to join the skeptics.

We need to keep a tight hand on district purse strings, and we must demand better data, more pilot programs, more models, and more demonstration projects. We should use baby steps, rather than a "ready, fire, aim" mentality.



the book

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21st Century Fluency Project

This resource is the collaborative effort of a group of experienced educators and entrepreneurs who have united to share their experience and ideas and to create a project geared toward making learning relevant to life in our new digital age. Our purpose is to develop exceptional resources to assist in transforming learning to be relevant to life in the 21st century. At the core of this project are our [Curriculum Integration Kits](#)—engaging, challenge-based learning modules designed to cultivate the essential [21st century fluencies](#) within the context of the required curriculum. For more information please visit our web site www.21stcenturyfluency.com.